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ABSTRACT

Although the guide was designed to accompany an instructional television series, it contains teacher-developed activities on map and globe skills which can be selected and adapted to the needs of elementary students independent of the series. Geographic concepts include direction, the globe, boundaries, hemispheres, scale, latitude, longitude, and time. Each program description identifies activities, content, and vocabulary, and grade level (ranging from primary through grade seven). For example, the program on map symbols is designated for grades two through seven. Activities for this program involve the students in visualizing symbols by looking at pictures of mountain ranges, islands, and rivers. Activities are also included on group and individual map-making projects and games for younger, intermediate, and upper-grade children. Program content is concerned with the reasons for using symbols; different types of symbols; reading the legend; meaning of shapes, colors, and lines; distance; and direction. Vocabulary words include "nonpictorial," "legend," "meridian," and "symbols." The pamphlet concludes with descriptions of six short teacher-inservice programs which suggest helpful ways of presenting the material. (AV)

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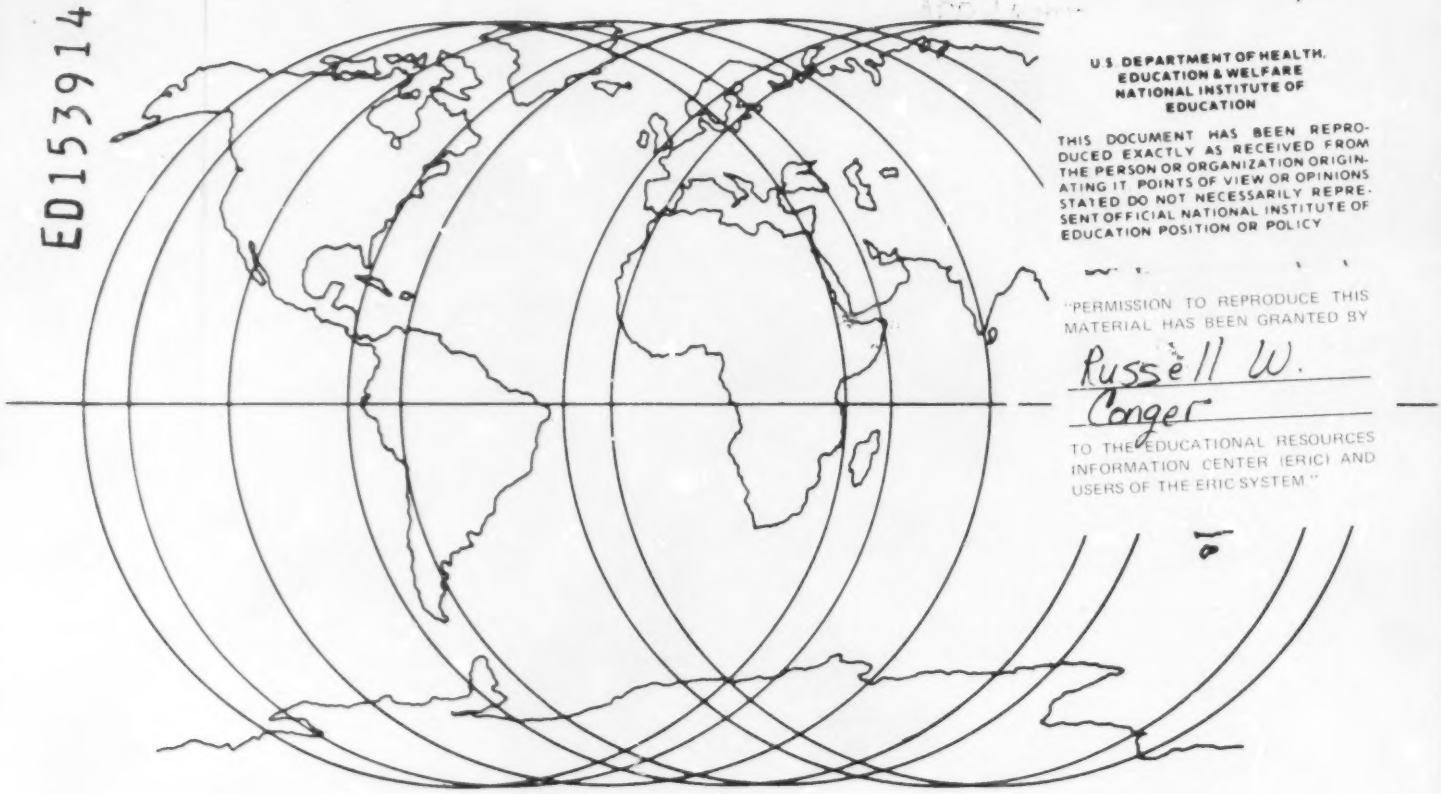

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MAP AND GLOBE READING SKILLS

SS 010 857

Division of Educational Media Services
Office of Instructional Services
Georgia Department of Education
Atlanta, Georgia 30334

Charles McDaniel, Georgia Superintendent of Schools
First Printing, 1975
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STATE OF GEORGIA
DEPARTMENT OF EDUCATION
OFFICE OF THE STATE SUPERINTENDENT OF SCHOOLS
STATE OFFICE BUILDING
ATLANTA 30334

CHARLES McDANIEL
State Superintendent of Schools

Dear Georgia Educator:

Georgia students are fortunate to live in a state where instructional television is an integral and important part of the education process. The support of the legislature and the State Board of Education for educational programming has been consistent and tangible through the years, and both bodies have demonstrated their willingness to expand our efforts to make educational television increasingly effective.

I believe educational television is an important tool that can be used by teachers and administrators in significantly expanding their students' growth and their own personal search for knowledge and understanding of contemporary society and the future. I commend it to you as a valuable and proven method of education and communication.

Sincerely,

Charles McDaniel
State Superintendent of Schools

MAP AND GLOBE-READING SKILLS

(COMPASS)

This guide has been prepared for classroom teachers. The concepts and activities are an outgrowth of work done by a committee of three classroom teachers, the television coordinator and social science coordinators from the Atlanta City and Fulton County School Systems, and the consultant from the Georgia Department of Education.

The concepts and activities described should be selected and adapted to the needs of your students. Map skills are essential in solving geography and history problems. These programs should help teachers and students perfect their understanding of map skills.

Since students are to be tested on map skills, the committee recommended that this unit begin the school year. For those teachers who perhaps would not have students ready for these skills then, the programs will be repeated later in the year. Please see the In-School Schedule Book for specific times and dates.

These programs are presented by Dr. Bruce Ogilvie, geographer from Rand McNally and Company, using the latest techniques and methods and visuals. Teachers' in-service programs, ten minutes in length, will be televised at specified times in order to clarify teachers' questions and to help the teacher better understand how to present this material to students. The time and dates of these in-service programs will also be found in the In-School Schedule Book.

The committee has planned for these televised lessons to be the very best way to introduce map skills to your students. Hopefully you'll be able to utilize each program.

Helen Gore, T.V. Coordinator
Elementary Social Science

Jeannette Moon, Social Science
Coordinator
Atlanta City Schools

Helen Richardson
Socia' Science Coordinator
Fulton County Schools

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Barbara Naylor, Second Grade
Tull Waters Elementary School
Atlanta City Schools

Rose Nichols, First Grade
Garden Hills Elementary School
Atlanta City Schools

PROGRAM DESCRIPTION AND ACTIVITIES

Program 1 - DIRECTIONS (Grades 2-7)

Type Dr. Bruce Ogilvie, Rand McNally Geographer, will present the program. Students Sonya Thomas and Paul Edenfield participate in the Activity Area.

Pre-Broadcast Activities

1. Familiarize students with terms of directions.

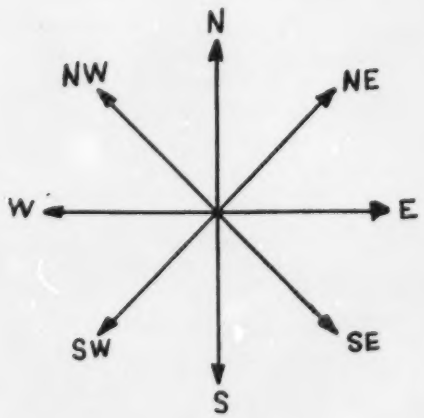
2. Take four large pieces of chart paper. Label them north, south, east, west. On the charts, print words or draw pictures of associations the children already have with each direction. (For example, with the direction north they might associate the North Pole, North America, colder weather, polar bears, eskimoes.) (Do not allow pupils to say "up north" and "down south".)

3. Print the cardinal directions on tagboard strips. Post each strip in the appropriate part of the room. Ask the children to name the locations of objects which are clearly in the north, south, east or west parts of the room.

4. Additional activities on directions may be found in book Which Way? Rand McNally & Company, 1969.

5. Care should be taken to establish the meaning of directions when flat maps are first used--constructing facsimiles of streets, houses, communities on the floor helps establish the flat map idea. Many of the difficulties encountered in the tendency to confuse north with up and south with down can be eliminated by experience in making floor maps using blocks, construction and other three dimensional material and by use of the globe.

6. Study positions of northeast (NE), northwest (NW), southeast (SE), and southwest (SW) on this direction finder:



Northeast (NE) means _____ and _____.

Northwest (NW) means _____ and _____.

Southeast (SE) means _____ and _____.

Southwest (SW) means _____ and _____.

Content

I. Environmental directions

a. Toward, away from, around
b. Along, across, with, against
c. Into, out of, through

II. Personal directions

Left, right, forward and backward

III. Clockwise and Counterclockwise

IV. Global directions

North, South, East West, up and down

V. Mileage distance key

VI. Legend and scale of map

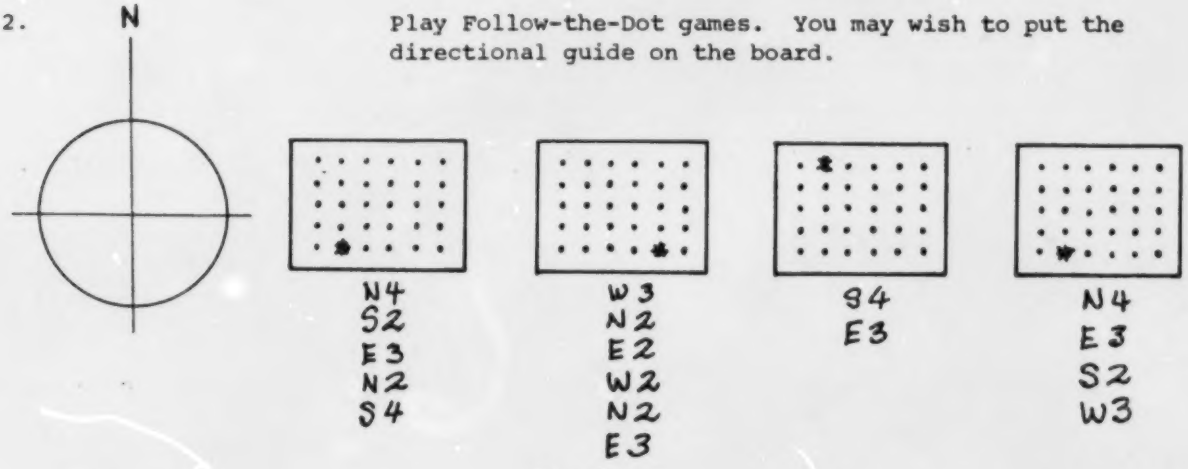
Vocabulary

counterclockwise	distance	against
degrees	parallel	toward
surface	forward	backward
boundary	continent	the poles (N. & S.)

Post Broadcast Activities

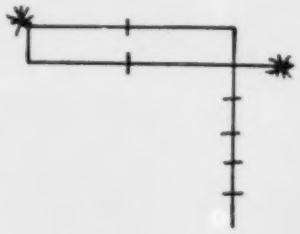
1. Construct a park area, play area, etc. in order for students to play the game of calling directions so that another student may act out "the call of directions." Maybe use "Simon Says" go around the park bench, etc.

2. Play Follow-the-Dot games. You may wish to put the directional guide on the board.



3. The teacher demonstrates that when she faces north, south is behind her; east is to her right and west is to her left. Have the class as a whole participate in the demonstration.

4. Prepare an imaginary bus trip around the community, as for example: We get on the bus on the corner of Fourth Street and Main Street. It goes three blocks west, turn north, and goes one block. The bus picks up more passengers. Then we go two blocks east and five blocks south. Have each child "draw the trip" as he "travels," as in the accompanying illustration.



5. Primary children use various means to describe location as they explore their home, school and community environment. Teachers, in asking primary children to tell how they go home from school, are aware of the great variation in ability to describe location. The child who says "I go away from the school a while and then I go down the street by the gas station" has his own clues but is not very successful in communicating location to others. When he says, "I go north on Center Street until I come to the gas station on Temple Avenue, then I turn left, and my house is number 228 in the middle of the second block," he is using clues that are helpful to others. Describing location begins with use of a variety of location clue words such as here, far, up, down, right, left, over, under. In map reading the cardinal directions are the common north, south, east, west clues, which children should experience in a variety of ways before using them to read formal maps.

6. Locating the direction of sunrise and sunset, using a compass to label directions in the classroom (with permanent compass on the floor or table) and on the playground (making sun-dials and weather vane) are beginning steps in efficient use of direction terminology. A more precise vocabulary to describe location develops as children use globes and maps. The terms continent, ocean, pole, equator, parallel, meridian and longitude come into use. Peninsula, isthmus, bay, island, sea and harbor are terms outside the experience of some children and remain empty of meaning until clarified through models, pictures and other means.

7. A Game to Play

"Which Direction"

Purpose: To provide a lively review of directions: north, south, east and west.

Players: Class

Materials: None

Directions: Have some of the pupils stand facing north. Then let the others take turns in naming another direction. Those who are standing should quickly point to that direction. After a few minutes, have another group of pupils change places with those who have been standing.

Adaptations:
(1) Let the players who are standing begin by facing south, east, or west.
(2) Ask the children to face the directions of several large cities, such as Chicago and Los Angeles.
(3) Follow up the game by using the intermediate compass points (northeast, southwest, etc.).

Cautions: This game will hold the children's interest if they play if for short periods of time.

8. Floor Map (Grades 2-4)

First, take the pupils for a walk around a block near the school. Ask them to look at the houses and note their size, shape, etc. Then, in the classroom, help them draw (on a large sheet of wrapping paper, with crayon) a simple map of the block, putting in the houses. Draw the streets around the block. Mark North, South, East and West on the map. Later the pupils may wish to make houses from paper or light cardboard to place on the map. Trees may be added. This map could be drawn on the playground or on the floor with chalk. Relative location and true direction are significant. Precise scale need not be a concern in the activity.

9. Prepare an imaginary bus trip around the community, for example: Get on a bus on the corner of Fifth Street and Peachtree Street. It goes three blocks west, turns south and goes one block. The bus picks up more passengers. Then we go two blocks east and five blocks north. Have the child draw the trip as he travels.

10. Play a game about the wind.

(1) Where does the cold wind come from? (North Pole - Point to the North Pole)
(2) Where do the warm breezes come from? (South Pole - Point to the South Pole)
(3) Appoint a leader to call directions, example: "Cold north wind" or "Snow from the West" (Class will face toward the directions the leader calls. Change leaders after he gives three directions).

11. Direction - (Upper Grade Activity)

An astronaut, orbiting the earth over the North and South Poles, would see "different worlds," depending on his orbital location. From one point, over Christmas Island, he would see a world that is almost all water. Over Kazan

in the Soviet Union, the globe would appear to be mostly land.

Direction and Location

Write T before each true sentence below, F if the sentence is false.

Over Christmas Island:

_____1. The astronaut would see the coast of North America on his left.
_____2. Four continents would be within view.
_____3. Heavily populated countries would be immediately beneath him
_____4. The Atlantic Ocean would be within sight to the east.
_____5. He could see Australia and England at the same time.
_____6. Traveling north, he would pass over part of the United States.
_____7. New Guinea would be west of his south-north orbit.
_____8. Two island nations, Australia and New Zealand, would lie to the southwest of his position over Christmas Island.
_____9. Hawaii would lie almost due north.

Over Kazan in the Soviet Union, traveling from north to south:

_____10. The astronaut would be able to see four oceans at one time.
_____11. All six continents would be within view.
_____12. Most of Europe would be to the west of the astronaut's orbit.
_____13. Continuing south, he would pass over Japan.
_____14. The astronaut would be able to see the southern tip of Africa.
_____15. At least four inland seas would be within his view.
_____16. Europe and Asia would seem to be all one continent.
_____17. At night, he would be able to see the lights of New York City.
_____18. His orbital path would fall between the Black Sea and Caspian Sea.
_____19. The Aral Sea would be to the east of the astronaut's orbit.
_____20. The Mediterranean Sea would be to the west.

Area : If the world's land area equals 57,506,000 square miles, and its water area is 139,434,000, the total area of the earth is _____ square miles.

Program 2 - THE GLOBE (Grades 4-7)

Type Dr. Bruce Ogilvie, Rand McNally Geographer, presents the program. Students - Lisa Nidever, Socrates Boyajian, and Alan West participate in the activity area.

Pre-Broadcasting Activities

1. To review the concept that the globe is a model of the earth, the teacher may use a toy, such as an airplane, to explain that a globe is the only true map of the earth because it shows all the lands and

seas in their true shapes, and standard positions. Also directions and areas are exact.

2. A bulletin board on continents would be a good learning experience for class. (Using the opaque projector to draw large shapes, the teacher may use captions stating name, size, countries, etc.) A piece of tracing paper can be taped to the globe surface for each continent outline to be traced. Then each area will be comparable and shapes correct.

3. The teacher and students may discuss the advantages and disadvantages of the globe.

   Advantages

   (a) Distances, areas, directions and true shape will appear in their correct relationship to one another upon a globe.
   (b) The globe is the best instrument for conveying the illusion of the earth as seen from space.
   (c) The globe is an excellent device for illustrating certain principles of mathematical geography, such as the length of great circle routes, or the variations in the length of the day.

   Disadvantages

   (a) Globes, being bulky, are difficult to handle and to store.
   (b) Globes are much more expensive than maps.
   (c) While it is possible to show all or almost all of the earth's surface upon a single map, no globe can show as much as one-half of the earth's surface to the viewer at any one time.

4. Children's concepts of the globe

   "The earth is big."
   "The earth goes around."
   "The blue shows water and the brown shows land. There's lots more water than land, isn't there?"

5. Many difficulties encountered in the tendency to confuse north with <u>up</u> and south with <u>down</u> can be eliminated by experience in making floor maps using blocks, or any three dimensional material and by using the globe. Starting with a formal map on the floor or table - north oriented north - can assist in reinforcing the idea that north means "toward the north pole", not "up".

<u>Content</u>

I. Model of the earth - the globe

   A. Directions on the earth and into space

      1. The earth turns from west to east.
      2. It takes the earth one year to travel all the way around the sun.

   B. The North Pole and South Pole

II. Kinds of maps

A. Variety

1. Not all round nor flat
2. Maps tell more about earth

B. Use cut-out box to show portion of globe you're discussing.

C. Greenland - largest island

1. Point out on flat map and compare on globe.
2. As you turn globe, is there a difference? Why?

D. Locate

1. Zero Meridian on globe
2. Zero Meridian on flat map

III. Land Areas

A. Australia - smallest continent (Three million square miles)

B. Europe - Peninsula (Four million square miles)

C. North America (Nine million square miles)

D. South America (Seven million square miles)

E. Africa - Second in size (Eleven million square miles)

F. Asia - Largest of Continents (Seventeen million square miles)

G. Antarctica (Five million square miles) - Continent with no people - third in size.

H. One-fourth of the world is land surface

I. Three-fourths of the world is water surface.

IV. Oceans

A. Names given to bodies of water

B. What continent or continents does each ocean touch?

Vocabulary

The poles	Atlantic	Asia
Zero	London	Africa
North America	Greenland	Indian
Anchorage	Globe	Antarctica
Meridian	Australia	South America
Europe	Rio de Janerio	Pacific

Post-Broadcasting Activities

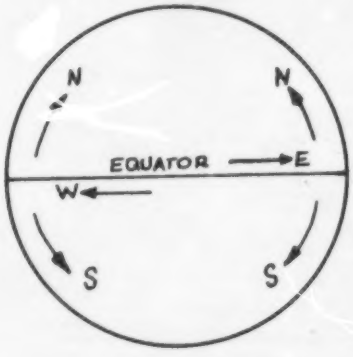
1. Divide the globe by Equator, N. Hemisphere (opposite) South Hemisphere. Divide the globe with 0° and 180° meridians. West Hemisphere (opposite) East Hemisphere. Land Hemisphere (opposite) water Hemisphere.

2. Have each student make his own globe by using an inflated balloon, paste and paper. These globes can be pasted over and drawn on again and again. The teacher may assign projects as the one below:

   Using the balloon globe, have students draw an outline map, placing the correct symbols for land formations.

3. The four corners of the room may be named after each ocean. The teacher should break the class into four small groups. Each group is responsible for a display area or corner with reports, pictures, objects, drawings, etc.

4. The teacher may draw a diagram, such as the one below, to show directions on a globe (Review of cardinal directions would be good at this time).



5. The teacher may prepare a symbol chart for classroom display. Review old symbols and introduce new ones.

6. Discuss the analemma - This is the date scale showing the sun's position for each day of the year. It shows the parallel over which the sun's rays are vertical on a particular date. For example: 23½° N, June 21; 15° S, February 10; 15° N., May 1.

Program 3 - BOUNDARIES (Grades 3-7)

Type: Studio Teacher, Miss Gore, presents the program

Pre-Broadcasting Activities

1. Locating boundaries: Trace with a pointer the line between the following countries or states:

   a. Canada and the United States
   b. Mexico and the United States
   c. Your own state and states bordering it
   d. Washington and Oregon
   e. Kansas and Nebraska
   f. Minnesota and Iowa

2. Locating Valleys: A valley can be thought of as low land between higher lands. With pictures and a map you can help students better understand and visualize different kinds of valleys as shown by the following examples:

   a. The wide valley in central California with mountains on each side. One river comes from the north, another from the south. They join and the water goes to a bay which is part of the Pacific Ocean.
   b. Narrow valleys between mountains. (The upper part of the Rio Grande in Colorado and New Mexico and others that look similar on the map.)
   c. Valleys in low land with land only a little higher on the sides. (Valleys in southern Alabama).

3. Trace boundary lines between countries, continents, states.

4. Cut out pictures from magazines representing different kinds of boundary lines. Arrange on bulletin board so students become more aware of boundaries.

Content

I. Boundary Lines

   A. What are they? Why have them?
   B. Who determines them?

II. Kinds

   A. hedge
   B. trees
   C. flowers
   D. a fence
   E. a brick or cement wall
   F. a river or stream
   G. a road or street
   H. a seashore, river bank, lake
   I. a county, city, state line
   J. countries which border others

III. The Continent of North America

   A. Trace the boundary lines of the United States.
   B. Oceans that border the Continent of North America
   C. State boundary lines

IV. Map Symbols

Vocabulary

boundary	Mason-Dixon	symbols
border	Country	continent
Maryland	Countries	Pennsylvania

Post-Broadcasting Activities

1. Traveling from state to state, do you see a boundary line? How do you know you're in another state?

2. Traveling from the United States to Canada, do you see a boundary line? Talk about customs, passports, signs, flags, etc., at the border.

3. How can we tell how much of North America belongs to each country? There are lines on the map that tell. Show on the map the line between Canada and the United States; the line between Mexico and the United States. Tell the children that such lines are called boundary lines.

4. Begin at the northeastern edge of the map and follow the coast line around to the southeast. Note countries that have regular coast lines and those that have irregular coast lines. Notice islands as well as indentations such as fiords, estuaries, bays and peninsulas.

Program 4 - HEMISPHERES (Primary -7)

Type: Dr. Bruce Ogilvie, Rand McNally Geographer, presents the program Students participating in activity area are Lisa Nidever, Socrates Boyajian and Alan West.

Pre-Broadcasting Activities

1. Special Point - There are an infinite number of hemispheres depending on the way the earth is positioned. Let's look at the earth from the usual position of the globe, what do we see?

2. Using the opaque projector, project a picture of the globe, point out to the students that the equator serves as an exact dividing line when the earth is divided into Northern and Southern Hemispheres.

3. One way to group continents is into the Eastern and Western Hemispheres?

4. What continents are in the Western Hemisphere or the New World?

   1. North America
   2. South America
   3. Part of Antarctica

5. What continents are in Eastern Hemisphere or the Old World?

   1. Europe
   2. Asia
   3. Africa
   4. Australia
   5. Part of Antarctica

Content

I. Hemisphere

   A. Name half a sphere or half of globe.
   B. North of equator is Northern Hemisphere.
   C. South of equator is the Southern Hemisphere.
   D. Measure air miles from Atlanta to places 6,250 miles. Connect these points with a great circle. Atlanta then will be in the center of the "Atlanta Hemisphere".
   E. All North-South lines or meridians meet at the North Pole in the Northern Hemisphere. They also meet at the South Pole in the Southern Hemisphere.

II. Spot cities across the world

Vocabulary

hemisphere	Southern Hemisphere
Northern Hemisphere	equator
sphere	globe

Post-broadcasting Activities

1. Since there are, as previously stated, innumerable hemispheres, let's examine why we use the term or spend time on the concept. It seems the only justification is that hemisphere is a "step" in the size-space hierachy we use:

   neighborhood
   city
   county
   state
   nation
   continent
   hemisphere
   world

2. A great circle, on a globe, is very special. It has as its center the center of the globe. Every great circle, therefore, divides the globe into equal halves--hemispheres.

   Example:

   A. The Equator - The only parallel which is a great circle. Other parallels leave only the axis of the Earth as their centers. They are smaller (circumference less than the circumference of the globe) and they do <u>not</u> divide the Earth into hemispheres.

B. Prime Meridian (0° longitude) and 180th Meridian --together a great circle--divide the Earth into halves: East & West Hemispheres.

C. Other great circles can be easily drawn with washable crayon if the globe cradle is equipped with a hemisphere ring (glosphere and Rand McNally II globe cradle) or the cradle has a horizon ring (Rand McNally Hinged Horizon Cradle).

D. Drawing a great circle with flexible plastic tape is awkward, difficult and perhaps not possible. Try making a table, but only use whole continents entirely in North or South, East or West:

Northern	Southern	Eastern	Western
North America	Australia	Asia	North America
Europe		Australia	South America
Asia			

E. Straddle Continents:
1. South America, Africa (Equator crosses; part north and part south in each continent)
2. Europe, Africa (Prime Meridian crosses each; part west and part east in each; 0° considered Eastern Hemisphere)

3. Game - "Which Hemisphere?"

Purpose: To give practice in locating countries in the two hemispheres
Players: Two or more
Materials: None
Directions: The leader or one of the players gives the name of the hemisphere as "Northern Hemisphere." If there are more than two players, the leader points to one player and counts to ten, the player pointed at must name a country located in the Northern Hemisphere. If he is successful, he then becomes "it" and names a hemisphere for another player.
Adaptations: Cities might be used in place of countries.
Cautions: During the first few times that this game is played, it would be helpful to use a world map or a globe. Later on these should always be available for reference if needed.

Program 5 - SCALE OF MAP or THE DISTANCE KEY (Grades 4-7)

Type: Dr. Bruce Ogilvie, Rand McNally Geographer, presents the program. Students Lisa Nidever, Alan West and Socrates Boyajian participate in activity area.

Pre-Broadcasting Activities

1. Teacher draws a scale or distance key of the classroom. Discuss size of scale to the actual room size with students. Draw the scale 1 in. and 3 feet.

2. Have the children measure the length and width of the room and verify the scale by comparing measurements of the room and drawing.

3. Have the children measure the length and width of the school building and discuss the difference in scale until it is clear.

4. Collect different sizes of tin cans. Let large coffee can represent continent, smaller can represent country, smaller can represent state, smaller can represent county and even smaller can represent city and another for neighborhood. The cans should graduate in size so that each fits into the other (6 cans in all).

Content

1. Scale - How many miles are there in each inch on the map?
2. Maps have different scales (depends on area).
3. Students draw maps of their neighborhoods; school locale; school yard.
4. Neighborhood map (point out where student lives).
5. City Map (point out neighborhood where student lives).
6. Show city in county on map. Compare size. What has happened to the scale or key?
7. Show county in state.
8. Show state in country; in continent.
9. Discuss the size of the continents:

    a) North America (9 million sq. miles)
    b) Africa - second in size (11 million sq. miles)
    c) South America (7 million sq. miles
    d) Europe (4 million sq. miles)
    e) Asia - largest in size (17 million sq. miles)
    f) Australia - smalles (3 million sq. miles)
    g) Antarctica - Continent with no people (5 million sq. miles)

Vocabulary

Use the names of the continents and the term "continent".

Note: The best possible definition of continent is "a large part of the Earth's surface, about sea level, that has been named." Continent does not refer to political or national units. The Soviet Union and Turkey, for example, are in both Europe and Asia.

Post-Broadcasting Activities

1. Students may use the scale to find the approximate distances between places, for example, from their home to a large city. (The easiest way to find approximate distance between two places is to mark off the distance on the straight line edge of a strip of paper, then lay on the map scale and measure the distance.)

2. The scale of miles concept

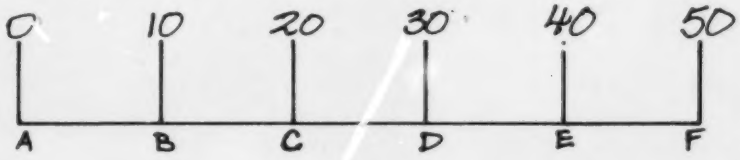
   (a) Find a simple map with a scale of miles in the textbook.
   (b) Have each pupil trace the scale of miles on the map or thin paper.
   (c) Put a list of pairs of places on the board and ask pupils to determine the number of miles which separate them by using the scale of miles they have traced.
   (d) Use maps with different scales, as needed, to measure distances between places until the basic concept is clear.

3. Play with the cans you made to represent continents, country, state, county, city, etc.

4. Using the scale of miles
   How large is Illinois? Measure the length and greatest width in inches. Apply the scale of miles, about how much time is required to go by train from Cairo, Ill. to Chicago? from Cairo, Georgia? Cairo, Egypt?

5. Primary Activity. Children who see their playground from the third floor windows or who look down on their town from its tallest building recognize that things look smaller and flatter when we look down on them.

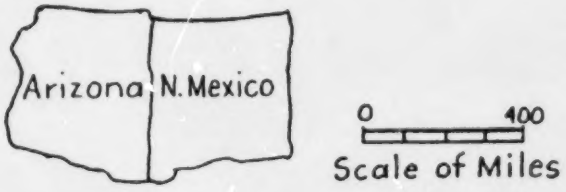
6. Below is a scale. Each section of the scale stands for 10 miles; the whole line stands for 50 miles. Study the scale. Then see if you can answer each of the questions.



   (a) From point A to point F on the scale is how many miles? It is 50 miles.
   (b) From point A to point C is how many miles?
   (c) From point A to point E is how many miles?
   (d) From point B to point D is how many miles?
   (e) From point D to point F is the same distance as that from point A to what point?
   (f) If you flew in an airplane from point A to point F and then back to point E, how many miles would you fly?

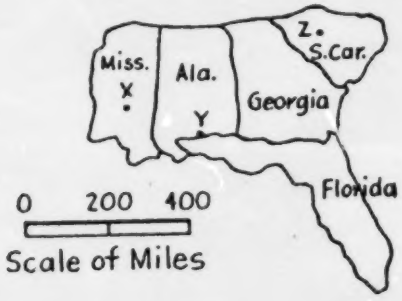
7. When it is summer in the Northern Hemisphere, is it winter in the Southern Hemisphere?

8. Look at the map below. The mileage scale on this map shows us the distance on the map which represents _____ miles.



Answer: 400

9. Take a piece of scrap paper and mark off the length of the line on the mileage scale in the map below. On your paper, make a mark for every 100 miles. Now use this paper as a guide in measuring distance on the map.



(a) How far is it between X and Y? _____

(b) How far is it between X and Z? _____

(c) About how many miles are there along the northern border of Florida? _____

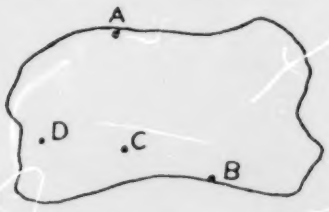
Answer: (a) 200 miles
(b) 500 miles
(c) 400 miles

10. Another way to measure distance on a map is by using a ruler. Look at the map of Utah below. 1 inch = 200 miles.

How far is it from Salt Lake City to the southern border of Utah?
_____ miles

Answer: 300 miles

11. Using your ruler, measure how far it is between A and B.



1" = 250 miles

The distance between A and B is _____ miles.

Now notice that points C and D are about ½ inch apart.

½ of 250 = _____

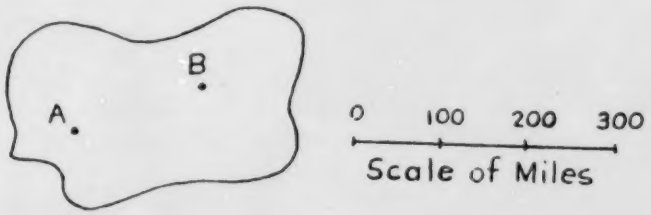
Therefore, C and D are _____ miles apart.

Answer: 250 miles
125 miles
125 miles

12. On the map below measure the distance (in miles) between X and Y.
_____ miles

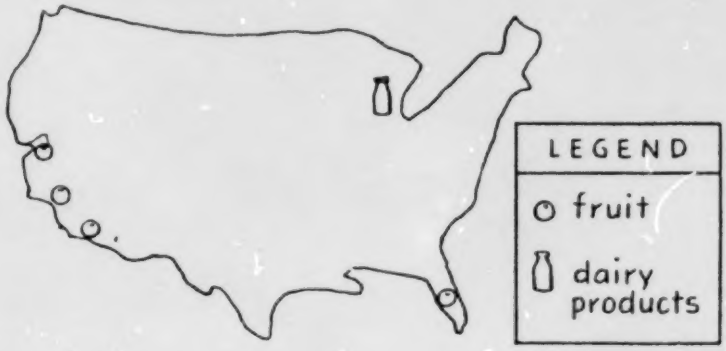
Answer: 75 miles

13. On the map below measure the distance (in miles) between A and B.
_____ miles



Answer: 150 miles

14. Legends, which are also important in map reading, tell the meaning of the symbols used on a map. Examine the legend on the map below.



On this map the legend tells us that the symbols used stand for _____ and _____ _____. Symbols used on a map are identified in the _____.

Answer: fruit
dairy products
legend

15. Here is another legend.

☆	wheat
o	barley
△	corn
□	oats

△ represents _____

□ represents _____

o represents _____

☆ represents _____

Answer: corn
oats
barley
wheat

16. Using the mileage scale and the legend on the map below, answer the following:

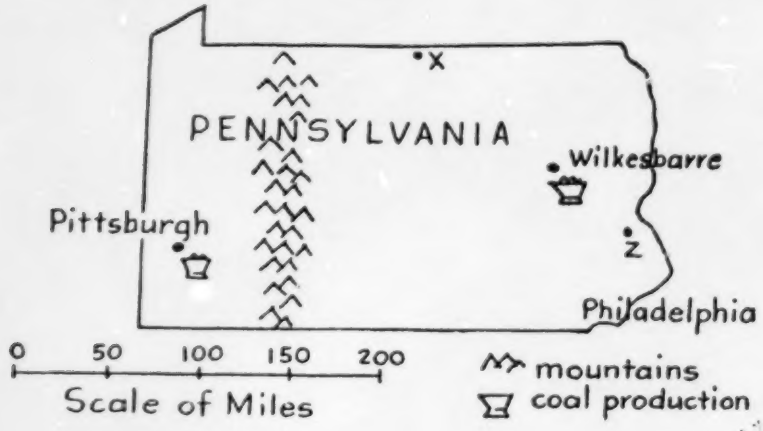
(a) How far is it between X and Z?_____

(b) What city is near the coal mining area in the western part of the state?_____.

(c) Name the city in the eastern part of Pennsylvania which is in the coal mining region. _____

(d) Where are most of the mountains of the state located?

_____



Answer: (a) 150 miles
(b) Pittsburgh
(c) Wilkesbarre
(d) in the west

Program 6 - MAPS TELL US (Symbols - Grades 2-7)

Type: Dr. Bruce Ogilvie, Rand McNally Geographer, will present the program. Students, Cassandra Franklin and Ronald Odom, participate in the activity area.

Pre-Broadcasting Activities

1. Teacher prepares a simple chart on basic map symbols to be displayed for classroom use at all times.

2. A three-dimensional bulletin board on map symbols would be a good introduction to this program.

3. A picture collection would help students to visualize symbols - pictures of rivers, falls, islands, mountain ranges, etc. (May be done by use of transparencies or opaque projector).

4. Blocks, boxes, cardboard boxes, candy, for example, represent buildings.

Content

I. Symbols - represent special marks and lines on a map.

II. Types of Symbols

A. semipictorial
B. nonpictorial

III. The legend will identify map symbols.

A. colors
B. boundaries
C. mountains
D. rivers
E. railroads
F. oceans
G. bridges

IV. Maps tell us

A. Which way? (directions - parallel and meridian)
B. How far? (distance)
C. Where? (where is the river, coastline, mountains, capes, bays, etc.)
D. What? (what is the shape - identify)

V. Maps tell us things by using:

A. Lines - railroads, highways, etc.
B. Shapes -
C. Color - land and water (how high and how deep)
D. Words - (by saying "what is it?")

VI. How far?

A. Legend - 1 inch represents 110 miles - called scale
B. Measure on map from one city to another
C. How many miles is 1 degree of latitude? (70 miles)

Vocabulary

semipictorial	legend	shapes	identify
nonpictorial	parallel	color	degrees
boundaries	meridian	symbols	lines

Post-Broadcasting Activities

1. Make individual maps of your community filling in the trees, houses, stores, bridges, railroads, etc. Establish symbols to represent each one.

2. Using the opaque projector, get a city map and have class to identify symbols found on the map.

3. A field trip to help students locate buildings or places in the neighborhood. Identify by using symbols.

4. Individual students may use a political map of state and label symbols.

5. Children should be aware that the distinguishing things in their environment can be described verbally, pictorially and, finally, by symbol. The step to using symbols takes place in many ways. For example, the route for a trip to the bakery, plotted on large paper by the teacher, may at first show only the streets involved, the school and the bakery. Later, as they have been noted, gas stations (blue squares), mail boxes (red oblongs), stop signs (red circles) may be added. When children make their own maps, they can determine for themselves how to represent the real things they have seen.

6. Intermediate and upper grade children need help in visualizing what symbols used on maps represent, in developing meanings for the many geographic terms used in relation to maps that are outside their experience. Symbols may show the type, location, distribution and quantity of geographical data. Familiarity with common geographers' symbols through instruction and practice is an important goal of map usage in these grades.

7. Skill in interpreting maps begins with attention to the legend, or key to symbols and this should be emphasized in both commercial and "homemade" maps.

8. The following are some of the many opportunities for first map-making experiences in the primary grades:

   Maps of our store, our playhouse, etc.
   Map of neighborhood around school
   Map of roads and important areas in our neighborhood
   Sandtable or "dirt map" of neighborhood
   Picture map of neighborhood

9. Map symbols may be used with the teacher drawing them on the board such as, What does mean? (river) What does mean? (capitol), etc.

10. Game - "Fire in the Forest" (3rd or 4th grade)

    Purpose: To encourage children to improve map-reading skills
    Players: Class
    Materials: A red flag or some other marker, duplicated sheets of an outline map of the room showing desk locations, two rulers and two pencils.
    Directions: Two children take their places in the corners at the front of the classroom and act as "fire wardens". Each member of the class pretends he is a tree. One child leaves the room. A designated pupil places the marker on another child's desk (a tree on fire). Each warden draws a line on his outline map, starting at his own location, going through the point of the fire and ending at the opposite edge of the paper. The marker is removed and the child is called back into the room. By putting

the maps together and by observing where the lines cross, he attempts to locate the tree on fire. He then chooses another child to leave the room and the game continues.

11. Kinds of maps (4-6)

Collect various types of maps, such as product maps, rainfall maps, physical maps, political maps, city maps, and road maps. Label each one and arrange them on a bulletin board.

12. Maps, keys and symbols (4-6)

To help the pupils gain an understanding of map, keys and symbols, have each one draw an imaginary land - an island or country. On this land, children draw and color in mountains, plains, rivers, and other physical features. They then develop a key for the map.

13. Children may use a sand table to show geographical concepts. For example, they may demonstrate the difference between an island and a peninsula or create a model of a lake, a bay, and a river.

Program 7 - LATITUDE (Grades 4-7)

Type: Dr. Bruce Ogilvie, Rand McNally Geographer, will present the program.

Pre-Broadcasting Activities

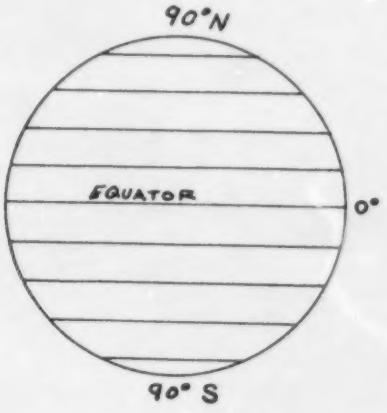
1. Latitude is distance north and south of the Equator (which is 0°) marked off by circles on the globe which are parallels. (Parallel to the equator). These lines are marked off in degrees. One degree of latitude is about 70 miles. If a place is 30° S., it is 30 X 70 = 2100 miles south of the equator.

2. Distance from the equator given in degrees is called latitude. Find symbols for cities 30° north of the equator and number these 30°; at about 40° North Latitude and number these 40°.

3. Mark and label one of the parallels. With crayons put large numbers on each parallel. Emphasize the fact that these numbers indicate the distance the parallel is from the equator.

4. The Rio de la Plata and long sections of its tributaries are in middle latitudes. Suggest possible effects of this location and the low altitude of the land on the types of natural vegetation and crops in the valley.

5. Make a globe. The imaginary line in the center of the earth is the equator. Make a line parallel to equator (make one above the equator and one below the equator). Make another set. Those parallel lines are used to measure distance of latitude. Parallel lines run east and west. The equator is 0° Latitude. The North Pole is 90° N. Latitude and the South Pole is 90° S. Latitude.



6. One degree of latitude equals about 70 earth miles. If you are at 30° N. Latitude, how many miles from the equator are you?

7. If you were at 60° North, you would be farther from the equator than someone who was at (a) 20° North, (b) 80° North, (c) 60° South.

8. If you were halfway between the North Pole and the equator, you would be at (a) 45° North, (b) 60° North, (c) 20° North.

Content

I. Latitude is the distance north or south of the Equator measured in degrees.

II. Know that the name given to north-south lines is meridian while the east-west line is called a parallel.

III. Purpose of latitude is to show distance north or south of the Equator on the map or globe.

IV. Identify Poles, Equator. Measure distance.

V. How do we measure in degrees?

VI. Introduce protractor:

a. Demonstrate use on globe
b. Demonstrate use on flat map

VII. Locate Atlanta using protractor - 34° N. Latitude.

VIII. Locate cities

A. Valdosta, Georgia
B. Porto Alegre, South America - 30° S. Latitude
C. Santiago, Chile - 34° S. Latitude
D. Quito, Ecuador - 0° - Only city in world that's right on equator
E. New Orleans - 30° N. Latitude

IX. Locate other cities around the world

A. Dakar - 15° N.
B. Manila - 15° N.
C. Shanghai - 30° N.
D. Rio de Janerio - 23½° S.
E. Durban - 30° S.
F. Sydney - 34° S.
G. Leningrad - 60° N.

Vocabulary

latitude	equator	locate	parallel
distance	purpose	hemisphere	notation
statue miles	degrees	equal	protractor

Note: Use names of cities in vocabulary.

Post-Broadcasting Activities

1. Which continents have land both north and south of the Equator?

2. What is the name of the parallel of 0° latitude?

3. What two places on the earth are 90° North Latitude and 90° South Latitude?

4. Give the latitude of Atlanta, Georgia. How many miles from the Equator is it?

5. Remember 1° of latitude equals 70 miles.

6. Latitude can be one major clue to the climate of a city.

7. Game - "Latitude or Longitude" :

Purpose: To check pupils knowledge of latitude and longitude
Players: Several sets of partners
Materials: Duplicated sheets as shown in the directions
Directions: Each player is given a duplicated sheet and the following instructions: What do you remember about longitude or latitude? Let's find out by completing this crossword puzzle. Can you do it more quickly than your partner?

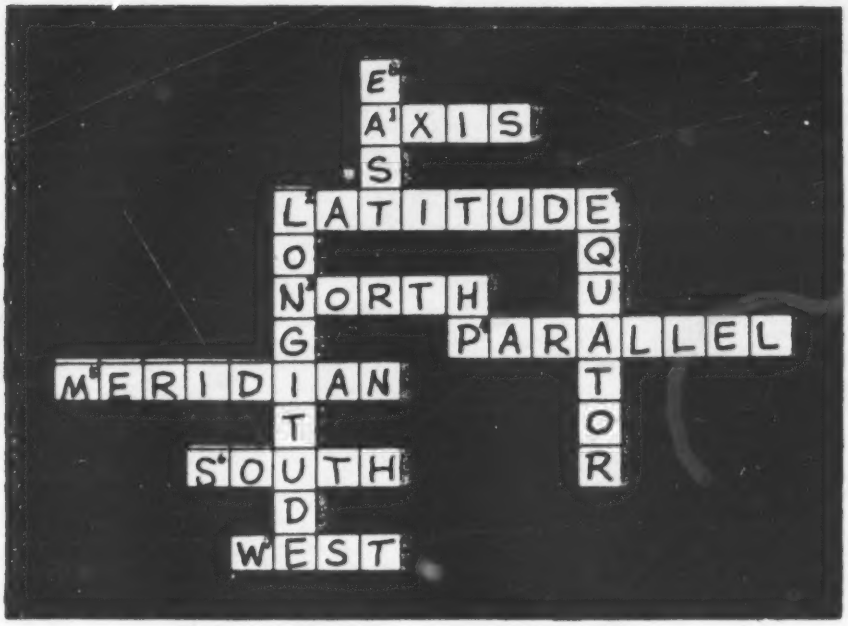
KEY

Across

1. The earth rotates on its _____.
2. Measures distances north or south of the equator.
3. We live in the _____latitudes.
4. Lines that mark off latitude.
5. Lines that mark off longitude.
6. The _____Pole is located on land.
7. We live in the _____longitudes.

Down

2. Measures distance east or west of the reference point.
8. Toward the rising sun
9. The 0^{o} parallel



Note: This puzzle can be used as an open-book exercise at the beginning of a lesson on latitude and longitude.

Program 8 - TIME AND DAY (Grades 5-7)

Type: Dr. Bruce Ogilvie, Rand McNally Geographer, presents the program.

Pre-Broadcasting Activities

1. What causes day and night?
   Answer: The earth's rotation

2. Make a standard Time Zone Map using different colors to represent each time zone. Teacher may use her own choice for colors.

3. How many degrees does each time zone cover?
   Answer: 15° Why? The earth rotates on its axis once every 24 hours, moving 360°. It therefore moves 15° in one hour.

   $360^{\circ} \div 24$ hours = 15° of longitude.

4. What has been established as the starting point of each new day?
   Answer: The International Date Line

Content

I. Use the Globe to mark off Time Zones

   A. One inch on globe represents 666 miles on the earth. Ask them to think of one inch representing a distance of about 700 miles or about 15 driving hours away. Place symbols on the globe to indicate places about 700 miles from the home location.
   B. Eastern Time Zone
      Locate Atlanta - 84° W. Longitude
   C. Central Time Zone
      Locate Chicago - 90° W. Longitude
   D. Mountain Time Zone
      Locate Denver - 105° W. Longitude
   E. Pacific Time Zone
      _____ - 120° W. Longitude
   F. In 1959 three other Time Zones were added:
      1. Alaska - Hawaii Time Zone
      2. Yukon Time Zone
      3. Bering Time Zone: (Western most time zone)

II. Telling day around the world

   A. Begin with Atlanta, Georgia
      1. Use globe which has hours marked on the base.
      2. Set globe at Eastern Standard Time - 2:00 P.M.

   B. If 2:00 P.M. in Atlanta, Georgia, what time is it in the following cities:
      1. London - Follow prime meridian line. Base of globe tells us it's 7:00 P.M.

2. Tehran - 10:00 P.M.
3. Karachi - 11:00 P.M.
4. Bombay - Midnight - Center of the Indian Ocean. Remember beyond midnight is tomorrow.
5. Manila - 4:00 A.M. (tomorrow) Because it's past International Date Line

Vocabulary

Eastern Time Zone	Alaska-Hawaii Time Zone	Bombay
Central Time Zone	Yukon Time Zone	Manilla
Mountain Time Zone	Bering Time Zone	International Date Line
Pacific Time Zone	London	Indian Ocean

Post-Broadcasting Activities

1. Using classmates, practice telling time using each Time Zone. Ask questions like: "If it's eight o'clock in the evening at 90° East Longitude, what time is it at 90° West Longitude?"

2. If it's 3:00 P.M. in Atlanta, Georgia, what time is it in

   a. Memphis, Tennessee
   b. Denver, Colorado
   c. San Francisco, California
   d. Anchorage, Alaska
   e. Osaka, Japan
   f. Berlin, Germany
   g. Sydney, Australia

3. How many Time Zones are there in the United States? (7 Time Zones)

4. When it is noon in Dakar, Senegal, it is _____a.m. in New York City.

5. Why does each Time Zone cover 15° ? The earth rotates on its axis once every 24 hours, moving 360°. It therefore moves 15° in one hour. 360° ÷ 24 hours = 15°

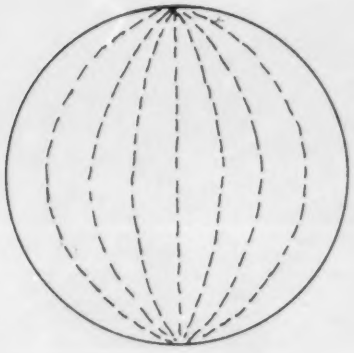
6. Mexico City is in the same Time Zone as the city of _____ in the United States? (Chicago) Remember the meridian is the center of each Time Zone. Boundaries vary greatly!

Program 9 - LONGITUDE (Grades 5-7)

Type: Dr. Bruce Ogilvie, Rand McNally Geographer, presents the program.

Pre-Broadcasting Activities

1. Make a globe. Point out the meridian. Note that it is an imaginary line that runs through Greenwich, England. Meridians run north and south. Make meridians on both sides of the prime meridian. Meridians measure distance east or west of the prime meridian. This distance is called longitude and is measured in degrees.



Longitude lines meet at the poles and are best used to measure time. The Prime Meridian is 0° Longitude. East Longitude extends 180° east of the Prime Meridian and West Longitude extends 180° west of the Prime Meridian.

2. Where do meridians meet?

3. If you were halfway between the Prime Meridian and 90° W. you would be at: (a) 60° W. (b) 20° W. (c) 45° W.

4. Look at a globe. Tell whether all of Africa is east of (a) 20° W. (b) 20° E. (c) 0° Longitude.

Content

I. Longitude

   A. Demonstrate with globe:
      The Prime Meridian is 0° Longitude.
      East Longitude extends 180° East of the Prime Meridian and West Longitude extends 180° West of the Prime Meridian.
   B. What is a Protractor? (a circular tool)
   C. Flat Map
      1. 85° W. Longitude is Atlanta, Georgia.
      2. 90° E. Longitude is Dacca, Bangledesh.
   D. All meridians come together at the poles.
   E. Don't try to measure miles in longitude only in latitude. Longitude measures time.

II. Locate cities around the world

   A. Dakar, Africa - 5° West Longitude
   B. Manila - 120° East Longitude
   C. Shanghai - 120° East Longitude
   D. Rio de Janeiro - 45° West Longitude

E. Durban - 30° E. Longitude
F. Sydney, Australia - 150° E. Longitude

III. Use both longitude and latitude to locate cities by correct geographic location.

A. Dakar's calling card - 15° W. Longitude - 15° N. Latitude
B. Manila - 15° N. Latitude - 120° E. Longitude
C. Rio de Janeiro - 23½° S. Latitude on Tropic of Capricorn - 45° W. Longitude
D. Durban - 30° S. Latitude - 30° E. Longitude
E. Sydney - 34° S. Latitude - 150° E. Longitude

Vocabulary:

axis	zero line	Denver
climate	Prime Meridian	Dakar
geographical	protractor	Manila
longitude	circular	Rio de Janeiro
Shanghai	Durban	Sydney
Memphis, Tennessee	Rockhampton	Leningrad

Post-Broadcasting Activities

1. How many time zones are there in the United States? (7) In the world? (24)

2. Using the globe, if it's 8:00 P.M. in the evening at 90° East Longitude, what time is it at 90° West Longitude?

3. If it's 12:00 P.M. in Atlanta, what time is it in San Francisco?

4. Is it ever the same calendar day all over the world? Why? Answer: Due to the earth's rotation, it is never the same calendar day all over the world. The International Date Line has been established as the starting point of each new day.

5. Remind students all meridians come together at the top of the globe.

6. Find the city located at 40° North Latitude and 75° West Longitude. What is the name of the city?

7. Practice using the protractor - you'll like it!!

8. With a large United States map, mark the time zones. Each child should have paper and pencil. Fold sheet of paper twice to form four columns. Label the columns Eastern Time, Central Time, Mountain Time, and Pacific Time. The teacher then calls out the name of a city and student will place it in the time column it belongs. Give one point for each correct placement. Are you ready?

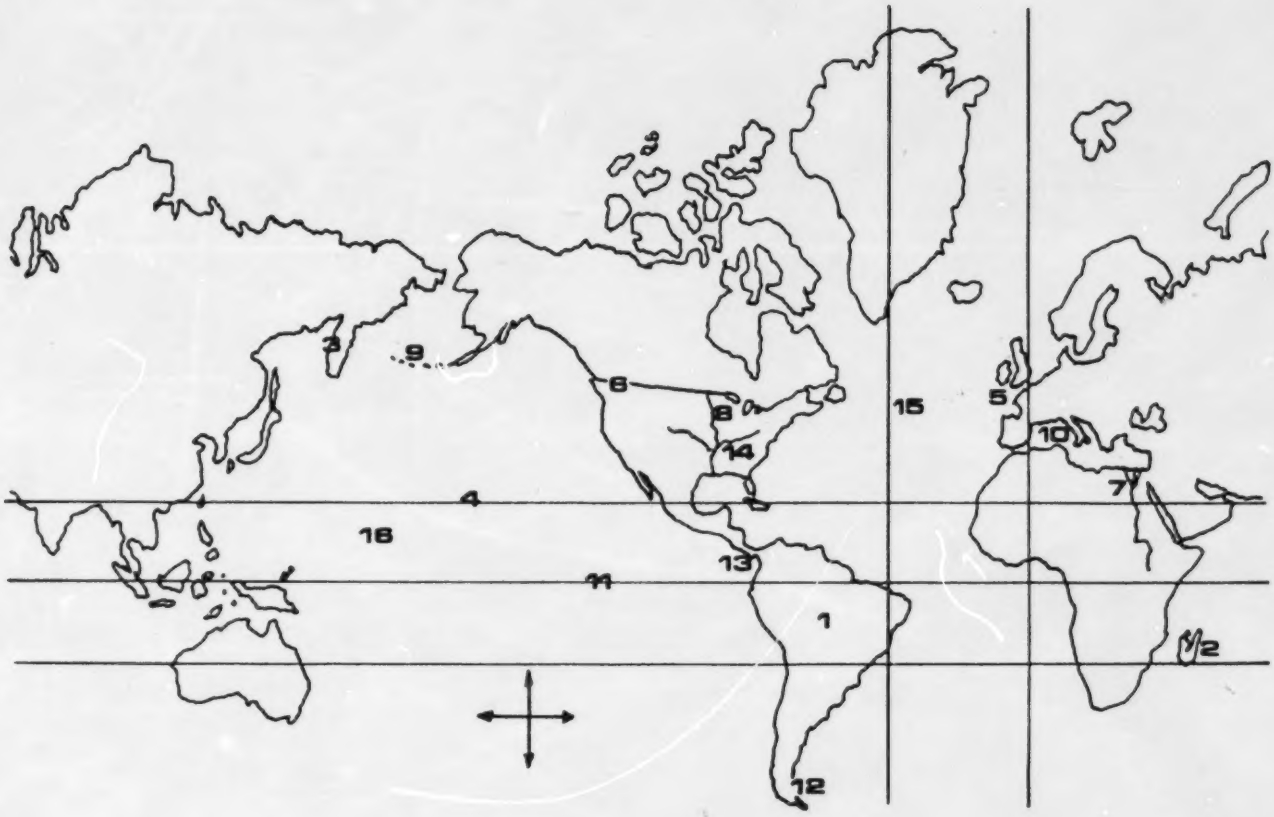
Examples

New York - Eastern
San Francisco - Pacific
Indianapolis - Central
Los Angeles - Pacific
Chicago - Central
Denver - Mountain
Detroit - Eastern

9. To measure distance north and south of the Equator, we use parallels, or _____lines. (latitude)

To measure east and west distance, we use _____lines or _____. (longitude, meridian).

TEST YOUR MAP SKILLS



1. Place the number on the map beside the word that tells what it is.

_____cape	_____ocean	_____bay	_____tributary
_____island	_____sea	_____isthmus	_____boundary
_____continent	_____peninsula	_____river	_____parallel
_____equator	_____archipelago	_____delta	_____meridian

2. Write the directions on the direction finder.

3. Here are the names of different kinds of maps.

1. Political	3. Topographical	5. Product
2. Population	4. Rainfall	6. Ocean Current

Write the number of the map which would be best to use to find:

(a) the location of highlands and lowlands._____
(b) the number of people living in an area._____
(c) if a country is a desert. _____
(d) the capitals of the countries. _____
(e) if the Gulf Stream flows near a continent. _____

4. The Scale of Miles on a map makes it possible for you to find _____
_____.

5. To find the altitude of the land on a topographical map, you must read the
_____.

6. If you were told to draw a map grid, what would you draw?_____
_____.

7. The Prime Meridian is the point from which _____is measured.

8. What words would you use to say the numbers 36° 5' N. which you might find on a map?_____

(a) On what line on a map would you find the numbers 36° 5' N?_____
_____

(b) What would the numbers mean?_____
_____

9. What are the north and south boundaries of the Torrid Zone?

North_____
South_____

10. When you travel downstream on a river, you are traveling away from the river's _____ and traveling toward the river's _____.

11. Elevation of land is measured from _____.
Mountains have _____elevation than plains.

12. A population map would show that the _____and _____zones have the largest number of people living there.

13. The parallel of latitude midway between the poles is called_____.

14. Describe:

(a) a tundra climate_____
_____

(b) a rainforest climate _____

_____

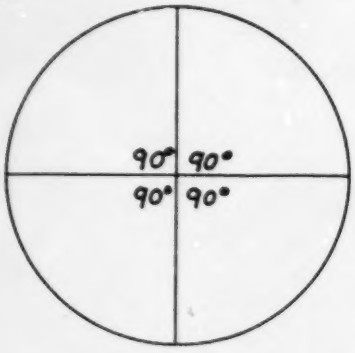
Teacher In-Service Programs

Program 1: THE GLOBE

A. Demonstrate by using globe and drinking straw for purpose of explaining seasons.

B. To say "parallel" about meridians can lead to misunderstanding. Parallels are circles. Parallels to equator are lines of latitude.

C. How do you get fourth graders to understand 360° ? Cut the pie into quarters.



Add Degrees:

$$\begin{array}{r} 90^\circ \\ +\ 90^\circ \\ \hline 180^\circ \end{array} \qquad \begin{array}{r} 90^\circ \\ +90^\circ \\ \hline 180^\circ \end{array}$$

$$\begin{array}{r} 180^\circ \\ +180^\circ \\ \hline 360^\circ \end{array}$$

Program 2: TIME RING FOR GLOBE

How does one teach time if you have no globes with the time base?

Answer: Show time ring on collar already made. Explain making procedures. All globes are either 16 or 12 inches. Cut out circle 16 or 12 inches depending on the size of your globe. Use compass to draw cirlce on cardboard. Now put on numbers. On the globe, meridians are printed lines every 30°. Between these meridians (lines pole to pole) are "grooves" where the globe map sections abut. These are 15° from the printed meridians. Each 15° meridian (alternate grooves and printed line) is the center (central meridian) of a standard time zone. With the cardboard ring at the meridian, mark each "central meridian" each hour on the ring with a mark using a felt point pen.

Program 3: READING MAP SCALES OR THE DISTANCE KEY

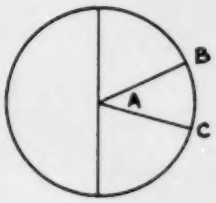
A. Students are asked to draw map of their hand, cubes, desk, etc. Point out the finished product is different. No two alike.

B. Draw map of neighborhood. Let 1 inch represent 1 mile.

C. Draw city map. With distance key still 6 inches, only number of miles change.

D. Draw county map. Notice scale decreases.

E. Draw state, then county, then continent. What happens? Scale of key gets smaller, map larger



A= 40°

BC= (arc) also 40°

Program 4: LATITUDE

A. How to position protractor on the globe?

B. How to make protractor for classroom use?

C. How and why he made a arc? An angle is an arc.

D. Latitude is measured (always show directions, i.e. 45° N. or 45° S. starting at 0 at the equator and 90° north or 90° to South Pole).

Program 5: LONGITUDE

A. Converging lines East and West of equator, but measure distance in degrees East and West. Do not make the mistake of calling parallel lines, lines of latitude, they are used to measure distance North and South.

B. Meridians are lines that run North and South from the Prime Meridian. Meridians mark off East and West distance. Use East and West for directions of distance. Both longitude and latitude begin with 1. Don't confuse them. Longitude is measured 180° East and 180° West.

C. Cities located all come out even. For example: Atlanta is 34° North Latitude and 80° West Longitude.

NOTE: The committee produced 41 packets which are available. Call Mrs. Jeanette Moon, Social Science Coordinator, Atlanta City School System at (404) 761-5411 for more information.